Index to Volume 64

Acid-Base Balance during Emergence in the Freshwater Bivalve *Corbicula fluminea,* 748

Ackerman, Ralph A., 568

Activity Physiology of the Two-striped Grasshopper, *Melanoplus bivittatus:* Gas Exchange, Hemolymph Acid-Base Status, Lactate Production, and the Effect of Temperature, 451

Adrenergic Effects on the Oxygen Affinity and pH of Cultured Erythrocytes and Blood of the Mummichog, *Fundulus heteroclitus,* 1407

Adrenergic Regulation of Erythrocyte Oxygen Affinity, pH, and Nucleotide Triphosphate/Hemoglobin Ratio in the Mummichog, *Fundulus heteroclitus,* 1391

Air Exposure and Physiological Compensation in a Tropical Intertidal Chiton, *Chiton stokesii* (Mollusca: Polyplacophora), 728

Alcoholic Fermentation in Multicellular Organisms, Invited Perspectives, 895

Allometry of Osmotic and Ionic Regulation in Amphibia with Emphasis on Intraspecific Scaling in Larval *Ambystoma tigrinum,* The, 1173

Allozyme Variation, Developmental Rate, and Differential Mortality in the Teleost *Fundulus heteroclitus,* 1426

Anaerobic Swimming Metabolism of Fish: Sit-and-Wait versus Active Forager, 485

Analysis of Physiological Data Characterized by Two Regimes Separated by an Abrupt Transition, Technical Comment, 885

Angiotensin II Stimulates Cutaneous Drinking in the Toad *Bufo punctatus,* 1165

Anoxia-induced Oxygen Debt of Goldfish (*Carassius auratus* L.) 525

Aota, Sumihisa, 432

Ar, Amos, 568

Arad, Zeev, 1356

Archer, Stephen D., 242

Austin, C. C., 212

Bahr, Janice M., 310

Bailey, John, 697

Bakken, George S., 653, 1023

Birchard, Geoffrey F., 960

Black, Marsha C., 145

Boggs, Christofer H., 502

Booth, David T., 473, 1307

Boyd, I. L., 375

Bradford, David F., 673, 688

Branchial Acid and Ammonia Fluxes in Response to Alkalosis and Acidosis in Two Marine Teleosts: Coho Salmon (*Oncorhynchus kisutch*) and Starry Flounder (*Platichthys stellatus*), 169

Branchial Ion and Acid-Base Transfer in Freshwater Teleost Fish: Environmental Hyperoxia as a Probe, 68

Braun, Eldon J., 1200

Brice, Ann T., 611

Brill, Richard W., 787

Brown, C. Randell, 276, 298

Brown, Mark A., 1234

Buffenstein, Rochelle, 871

Burggren, Warren W., 728

Bushnell, Peter G., 787

Buskirk, Steven W., 1262

Byrne, Roger A., 748

Cameron, James N., 276, 298

Cardiac Output in Swimming California Sea Lions, *Zalophus californianus,* 1296

Cavdek, Vandy, 103, 124

Chambers, Geoffrey K., 1234

Changes in Ventilation and Respiratory Sensitivity Associated with Hibernation in Columbian (*Spermophilus columbianus*) and Golden-mantled

(*Spermophilus lateralis*) Ground Squirrels, 940
CHAPPELL, MARK A., 1527
Characterization of the Stress Protein Response in Two Species of *Collisella* Limpets with Different Temperature Tolerances, 1471
CHILDRESS, JAMES J., 1444
CHOI, IN-HO, 653
COCKREM, JOHN F., 1234
COELHO, JOSEPH R., 823
COLACINO, JAMES M., 1561
Comparative Plasma and Urine Chemistry of Fasting White-tailed Prairie Dogs (*Cynomys leucurus*) and American Martens (*Martes americana*): Representative Fat- and Lean-bodied Animals, 1262
Comparison of Digestive Adaptations in Two Neotropical Cricetid Rodents (*Holochilus venezuelae* and *Zygodontomys microtinus*), A, 1542
Consequences of Metamorphosis on Salamander (*Ambystoma*) Locomotor Performance, The, 212
CREE, ALISON, 1234
Critique of Symmorphosis and Optimality Models in Physiology, A, Invited Perspectives, 627

DAHLHOFF, ELIZABETH, 1490, 1509
DALESSIO, PAULA M., 1391, 1407
DANIELS, C. B., 985
DAWSON, A., 1252
DAWSON, WILLIAM R., 1279
DEEMING, D. C., 1002
Density of Cristae and Distribution of Mitochondria in the Slow Muscle Fibers of Antarctic Fish, 242
DIETZ, THOMAS H., 748
DIMICHELE, LEONARD, 1391, 1407, 1426
Diurnal Variation in Mass, Metabolic Rate, and Respiratory Quotient in Anna's and Costa's Hummingbirds, 850
Do Cetaceans Really Have Elevated Metabolic Rates? Technical Comment, 1130
DOMÍNGUEZ-BELLO, M. G., 1542
Dorsoventral Muscles of *Carcinus maenas*: Evidence for Hydrostatic Pressure Control in a Crab, The, 1110
DRIEDZIC, WILLIAM R., 697
DUCK, C. D., 375
DUDLEY, ROBERT, 627
DUERR, JEFFREY M., 1552
DUGGLEBY, RONALD G., 885

Early Development of Thermoregulation in Birds, The, Invited Perspectives, 1371
Effect of Thorax Temperature on Force Production during Tethered Flight in Honeybee (*Apis mellifera*) Drones, Workers, and Queens, The, 823
Effect of Water Deprivation on Renal Function in Conscious Unrestrained Gambel's Quail (*Callipepla gambelii*), The, 1200
Effect of Wind and Air Temperature on Metabolism and Evaporative Water Loss Rates of Dark-eyed Juncos, *Junco hyemalis*: A Standard Operative Temperature Scale, The, 1023
Effects of Acute Temperature Change on Respiration and Toxicant Uptake by Rainbow Trout, *Salmo gairdneri* (Richardson), 145
Effects of Soil pH on Sodium Balance in the Red-backed Salamander, *Plethodon cinereus*, and Three Other Terrestrial Salamanders, The, 1050
ELLIS, HUGH I., 973
ELLIS, R., 103
Embryonic Heart Rate during Development of Domesticated Birds, 1002
Embryonic Respiration and Oxygen Distribution in Foamy and Nonfoamy Egg Masses of the Frog *Limnodynastes tasmaniensis*, 1322
Energetic and Thermoregulatory Aspects of Clustering Behavior in the Neotropical Bat *Noctilio albiventris*, 1527
Environmental Effects on Fish Gill Morphology, 4

Environmental Effects on Gill Function: An Introduction, 1
Environmental Impacts on the Physiological Mechanisms Controlling Xenobiotic Transfer across Fish Gills, 39
ERICKSON, RUSSELL J., 39
ERSKINE, DALE J., 1023
Evolution of Mammalian Blood Parameters: Patterns and Their Interpretation, The, 393

Facultative Aerial Respiration in an Intertidal Sculpin, *Clinocottus analis* (Scorpaeniformes: Cottidae), 1341
FARRELL, ANTHONY P., 1137
FAVUZZI, JOHN A., 1444
FEDER, MARTIN E., 1307
FISHER, CHARLES R., 1444
Formation of Hypoxic Boundary Layers and Their Biological Implications in a Skin-breathing Aquatic Salamander, *Desmognathus quadramaculatus*, 1307
FOSTER, GLEN D., 259
FRAPPELL, P. B., 985
FREDA, JOSEPH, 124
FRISBIE, MALCOLM PRATT, 1050
FRITSCHE, REGINA, 1087
From Hagfish to Tuna: A Perspective on Cardiac Function in Fish, Invited Perspectives, 1137

GANS, CARL, 627
Gas Conductance of the Jelly Capsule of Terrestrial Frog Eggs Correlates with Embryonic Stage, Not Metabolic Demand or Ambient Po_2, 673
GEISER, FRITZ, 673, 688
Gill Design in Freshwater Fishes: Interrelationships among Gas Exchange, Ion Regulation, and Acid-Base Regulation, 103
Gill Water Flow and the Chemistry of the Boundary Layer, 26
GLEESON, TODD T., 451
GONZALEZ, RICHARD, 124
GOOLISH, EDWARD M., 485
GRAU, C. RICHARD, 611
GREENAWAY, PETER, 767
GROSCOLAS, R., 1217
GROSS, MART R., 310
Growth, Water, and Energy Metabolism of the Soft-shelled Turtle (*Trionyx triunguis*) Embryo: Effects of Temperature, 568
GUILLETTE, LOUIS J., JR., 1234

HAMMOND, KIMBERLY A., 541
HARLOW, HENRY J., 1262
HARRISON, JON F., 451
HEBLING-BERALDO, MARIA JOSÉ A., 232
Hemoglobin Function in the Lophophorate *Phoronis architecta* (Phoronida), 1561
HILLMAN, STANLEY S., 1552
HILLYARD, STANLEY DONALD, 1165
HIRAGUCHI, T., 1002
HOFF, KARIN VON SECKENDORFF, 1165
HOPE, CHRISTOPHER, 1471
Hormonal Regulation of Parental Care Behavior in Nesting Male Bluegills: Do the Effects of Bromocriptine Suggest a Role for Prolactin? 310
HOYT, DONALD F., 1173
Huddling Behavior Facilitates Homeothermy in the Naked Mole Rat *Heterocephalus glaber*, 871
HUEY, R. B., 212
Hypometabolism with Fasting in the Yellow Perch (*Perca flavescens*): A Study of Enzymes, Hepatocyte Metabolism, and Tissue Size, 259

Impact of an Acute Temperature Change on Performance and Metabolism of Pickerel (*Esox niger*) and Eel (*Anguilla rostrata*) Hearts, 697
Induction of Photorefractoriness and Molt in Starlings, *Sturnus vulgaris*, by Continuous or Intermittent Long Days, The, 1252
Induction of Specific Dynamic Action in Channel Catfish by Infusion of Essential Amino Acids, The, 276
INNES, S., 1130
Instantaneous Aerodynamic Forces

Developed by an Indian Moon Moth, *Actias selene,* in Near-Hovering Flight, 193
Interspecific Differences in Gill Morphology of Freshwater Fish in Relation to Tolerance of Low-pH Environments, 124
Ion Conservation by Reprocessing of Urine in the Land Crab *Gecarcinus lateralis* (Freminville), 344
ITSAKI-GLUCKLICH, SARAH, 1356

JACKSON, THOMAS L., 638
JEHL, JOSEPH R., JR., 973
JOHNSTON, IAN A., 242

KASTING, NORMAN, 1135
KINDLER, PAWEL M., 310
KINKEAD, RICHARD, 1087
KITCHELL, JAMES F., 502
KOOYMAN, GERALD L., 1296
KURODA, O., 1002

LAURENT, PIERRE, 4
LAVIGNE, D. M., 1130
LEA, MALCOLM S., 1552
LESHEM, ADAH, 568
LIN, H., 26
Locomotion and Muscle Function during Postnatal Development of the Northern Bobwhite (*Colinus virginianus*): Effect of Body Temperature, 653
LUTZ, PETER L., 638

MCARTHUR, M. DAWN, 921, 940
MCCARTHY, JOHN F., 145
MCDONALD, D. GORDON, 103, 124, 169
MCKENZIE, DAVID J., 432
MCKIM, JAMES M., 39
MACLATCHY, L. M., 836
MCMAHON, BRIAN R., 728
MCMAHON, ROBERT F., 748
MARTIN, KAREN L. M., 1341
MARTIN, LESLIE S., 1471
Mass Changes and Metabolism in Territorial Male Antarctic Fur Seals (*Arctocephalus gazella*), 375
Metabolic Cost of Development in Terrestrial Frog Eggs (*Pseudophryne bibronii*), 688
Metabolic Responses of the Toad *Bufo marinus* to Environmental Hypoxia: An Analysis of the Critical P_{O_2}, 836
MILLIGAN, C. LOUISE, 169
MILLSAP, DEBORAH S., 145
MILSOM, WILLIAM K., 921, 940
MOBIN, FARDAD, 812
MOON, THOMAS W., 259
MORIN, F., 1217
MORRISON, ROY J., 323
MURPHY, MICHAEL T., 1023

NAGY, KENNETH A., 362
NAKAMURA, TAMO, 767
Neurotransmitters and Anoxic Survival of the Brain: A Comparison of Anoxia-tolerant and Anoxia-intolerant Vertebrates, 638
NEWTON, JOHN D., 1234
NICKERSON, DAVID M., 890
NILSSON, GÖRAN E., 638
NILSSON, STEFAN, 1087
Nitrogenous Excretion in Two Terrestrial Crabs (*Gecarcoidea natalis* and *Geograpsus grayi*), 767
Nitrogenous Waste Excretion, Acid-Base Regulation, and Ionoregulation in Rainbow Trout (*Oncorhynchus mykiss*) Exposed to Extremely Alkaline Water, 1069

O'BRIEN, JOHN, 1490, 1509
O'CONNOR, TIMOTHY P., 1279
Ontogeny of Brain Temperature Regulation in Quail Chicks (*Coturnix coturnix japonica*), 1356
Osmotic Effects on Mitochondria from Two Species of Amphibian, *Bufo marinus* and *Rana catesbeiana,* 1552
Oxygen Consumption, Air-Cell Gas Tensions, and Incubation Parameters of Mute Swan Eggs, 473

PACELLI, MYRA M., 1200
PARSONS, ROBERT H., 812

Partitioning of Oxygen Uptake between Cutaneous and Branchial Surfaces in Larval and Young Juvenile Chinook Salmon *Oncorhynchus tshawytscha*, 717
Pascoe, Virginia M., 1471
Penteado, Carlos Henrique Silva, 232
Perry, Steve F., 4, 1087
Philipp, David P., 310
Phillips, John E., 451
Physiological Responses of the Crayfish *Pacifastacus leniusculus* (Dana) to Environmental Hyperoxia. III. Intracellular Acid-Base Balance, 323
Pinder, Alan W., 728
Ponganis, Paul J., 1296
Pörtner, H. O., 836
Powers, Dennis A., 1391, 1407, 1426
Powers, Donald R., 850
Prior, Todd, 169
Promislow, Daniel E. L., 393
Protein Requirements of Costa's Hummingbirds, *Calypte costae*, 611
Pruett, Susan J., 1173

Randall, David J., 26, 432
Regulation of Phosphofructokinase during Estivation and Anoxia in the Land Snail, *Otala lactea*, 595
Relationship between Specific Dynamic Action (SDA) and Protein Synthesis Rates in the Channel Catfish, The, 298
Reply to Technical Comment, 890
Reply to Technical Comment, 894
Reply to Technical Comment, 1135
Respiratory Responses in a Brazilian Millipede, *Pseudonannolene tricolor*, to Declining Oxygen Pressures, 232
Responses of Swimming Skipjack (*Katsuwonus pelamis*) and Yellowfin (*Thunnus albacares*) Tunas to Acute Hypoxia, and a Model of Their Cardiorespiratory Function, 787
Roberts, J. Dale, 1322
Robinson, M. D., 1542
Role of Circulating Catecholamines in the Ventilatory and Hypertensive Responses to Hypoxia in the Atlantic Cod (*Gadus morhua*), The, 1087
Role of Diet Quality and Energy Need in the Nutritional Ecology of a Small Herbivore, *Microtus ochrogaster*, The, 541
Rombough, Peter J., 717
Root, Terry L., 1279
Roverud, Roald C., 1527

Sanders, Brenda M., 1471
Sanders, N. K., 1444
Schreiber, L., 1217
Sephton, Dawn, 697
Seymour, Roger S., 673, 688, 1322
Shaffer, H. Bradley, 212
Shipman, Bradley N., 748
Slow Estradiol-induced Vitellogenesis in the Tuatara, *Sphenodon punctatus*, 1234
Smatresk, Neal J., 748
Soivio, Antti, 1
Somero, George N., 1490, 1509
Sotherland, Paul R., 473
Standard Metabolic Level and Insulative Characteristics of Eastern House Finches, *Carpodacus mexicanus* (Müller), 1279
Stiffler, Daniel F., 1173
Storey, Kenneth B., 595
Substrate Metabolism under Cold Stress in Seasonally Acclimatized Dark-eyed Juncos, 1578
Sulfide and Carbon Dioxide Uptake by the Hydrothermal Vent Clam, *Calyptogena magnifica*, and Its Chemoautotrophic Symbionts, 1444
Swanson, David L., 1578

Taylor, E. W., 1110
Taylor, H. H., 1110
Tazawa, H., 1002, 1371
Temperature Effects on Mitochondria from Hydrothermal Vent Invertebrates: Evidence for Adaptation to Elevated and Variable Habitat Temperatures, 1490
Thermal Resistance of Mitochondrial

Respiration: Hydrophobic Interactions of Membrane Proteins May Limit Thermal Resistance, 1509
TIEBOUT, HARRY M., III, 362
TOEWS, D. P., 836
TOOP, TES, 323
Total Body Water and Body Composition in Phalaropes and Other Birds, 973
TULLETT, S. G., 1002
Tuna Metabolic Rates Estimated from Energy Losses during Starvation, 502

ULTSCH, GORDON R., 894
URE, DARREN, 717
Use of Tritiated Water to Determine Protein and Lipid Utilization in Fasting Birds: A Validation Study in Incubating Great-winged Petrels, *Pterodroma macroptera*, The, 1217

Validation of the Doubly Labeled Water Method ($^3HH^{18}O$) for Measuring Water Flux and CO_2 Production in the Tropical Hummingbird *Amazilia saucerottei*, 362
VAN DEN THILLART, GUIDO, 525
VANDERGON, THOMAS L., 1561
Ventilation and Oxygen Consumption in Agamid Lizards, 985
Ventilation and Respiratory Sensitivity of Euthermic Columbian and Golden-mantled Ground Squirrels (*Spermophilus columbianus* and *Spermophilus lateralis*) during the Summer and Winter, 921
Ventilatory and Cardiovascular Responses to Blood pH, Plasma P_{CO_2}, Blood O_2 Content, and Catecholamines in an Air-breathing Fish, the Bowfin (*Amia calva*), 432
VERBEEK, RIEN, 525
VETTER, RUSSELL D., 1490

WAARDE, AREN VAN, 895
WARD, LEIGH C., 885
Water Flow across the Pectoral and Ventral Pelvic Patch in *Rana catesbeiana*, 812
Water Vapor and Oxygen Exchange of Praying Mantis (*Tenodera aridifolia sinensis*) Egg Cases, 960
WHEATLY, MICHELE G., 323, 728
WHITTOW, G. CAUSEY, 1371
WHITWAM, ROSS E., 595
WILKIE, MICHAEL P., 1069
WILKIN, PETER J., 193
WILLIAMS, JOSEPH B., 1200
WOLCOTT, DONNA L., 344
WOLCOTT, THOMAS G., 344
WOOD, CHRIS M., 1, 68, 1069
WRIGHT, P. A., 26
WUNDER, BRUCE A., 541
WYMAN, RICHARD L., 1050

YAHAV, SHLOMO, 871
YEAGER, DORIAN P., 894
YOW, LEANNE C., 323

ZIA, SHAHEEN, 124
ZORNOW, MARK H., 1296